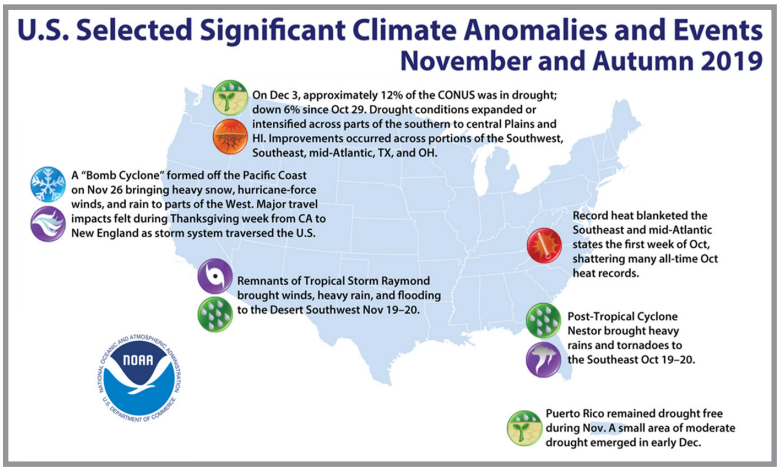
Quarterly Climate Impacts and Outlook

Southeast Region

December 2019

National and Regional Weather Highlights for Autumn 2019



*Much-above-average **maximum temperatures** were observed across the Southeast this autumn. Montgomery, AL, and Pensacola, FL broke **records for highest count** of September days above 90 degrees F. Several stations across the region observed their warmest October daily maximum temperature on record. A **flash drought** emerged during the first half of the season, due to the warm temperatures and lack of precipitation. Puerto Rico however, remained drought free in November. For more information, see: https://www.ncdc.noaa.gov/sotc/*

Highlights for the Southeast

There were several **extremes in temperature** recorded across the region. Montgomery, AL, Pensacola, FL and Atlanta, GA all broke their **warmest October** daily maximum temperature record. Raleigh, NC, Athens, GA and Asheville, NC each reported their **maximum daytime temperature** of the year.

Precipitation was well **below normal** for the Southeast at the start of the season. Pensacola, FL, Gainesville, GA and Marion, AL had **no measurable precipitation** for the month of September. Miami, FL observed its 2nd driest autumn.

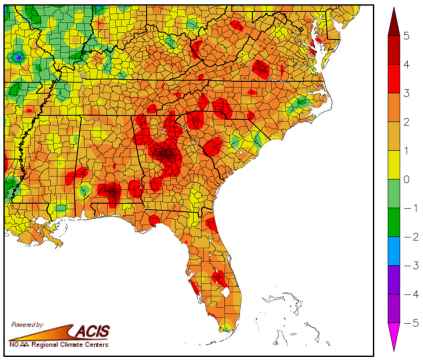
Hurricane Dorian made landfall at Cape Hatteras on September 6th. Peak wind gusts of 110 mph were reported at Cedar Island Ferry, NC. Ocracoke Island, NC observed **severe storm surge flooding**, trapping several residents in their attics.

Tropical storms, **Nestor and Olga** affected portions of the region towards the end of October, easing drought conditions. An **EF-2 tornado** occurred in Polk County, FL, due to Nestor and Tuscaloosa, AL observed a new maximum daily precipitation record for October as a result of heavy rains from Olga.

Regional Weather Overview for Autumn 2019

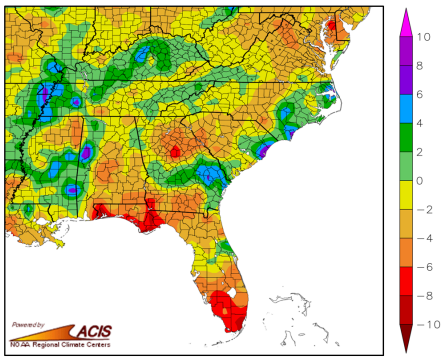
Temperature and Precipitation Anomalies

Mean Temperature: Departure from Average (°F)
September – November 2019



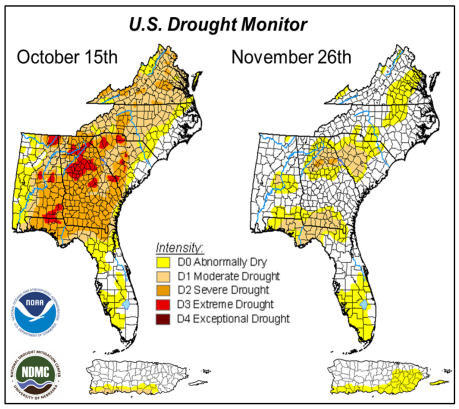
Above-average temperatures were recorded over most of the Southeast. Mean temperatures were in the top five warmest at 35 long-term stations. From mid-September to mid-October, an unseasonably warm air mass moved over the region with the Bermuda high positioned off the coast of the Carolinas, allowing for several maximum temperature records to be broken. Miami, FL, Charlotte, NC and Aibonito, PR all observed their warmest autumn on record.

Precipitation: Departure from Normal (in)
September – November 2019



Autumn precipitation was below normal for most of the Southeast region. None of the long-term stations ranked within the top 10 wettest for the season. Niceville, FL observed 47 consecutive days with no measurable precipitation and Macon, GA observed 32 consecutive days with no measurable precipitation. The wettest locations were found in the eastern Carolinas and southern Georgia due to impacts from tropical moisture.

Drought

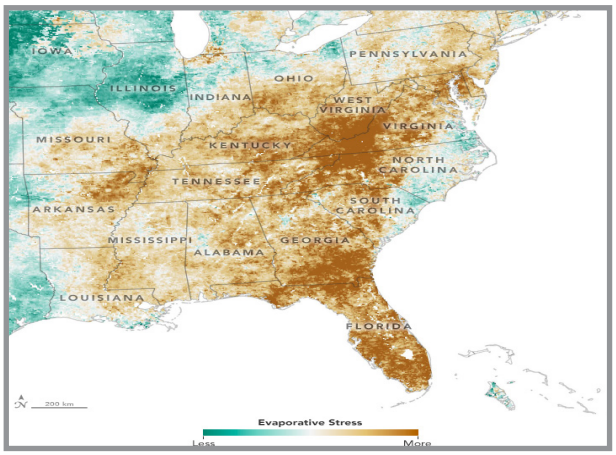


The unseasonably warm temperatures and below average precipitation produced a flash drought across the Southeast region, which peaked in the middle of October. Pockets of extreme drought (D3) were reported in Alabama, Georgia, South Carolina and the panhandle of Florida. Severe drought (D2) covered a third of the region and moderate drought (D1) covered two thirds of the region. Puerto Rico reported no drought conditions for all of November.

Contacts: Chip Konrad, Sandra Rayne and William Schmitz (SERCC)
Ellen Mecray (NOAA/NCEI)

Regional Climate Impacts for Autumn 2019

Flash Drought



Evaporative Stress Index (ESI) NASA Earth Observatory

The combination of record-breaking heat and lack of precipitation led to the rapid development of drought across the Southeast region this autumn. The flash drought produced significant agricultural impacts, especially with declining pasture conditions and a reduction in water supplies. Many livestock farmers had to use supplemental feeding and were concerned about hay resources, as they had already used much of their limited winter supply. In parts of Georgia, cattle was sold off as many water sources were drying up, along with the Flint River. The hot, dry, conditions produced a low corn yield in North Carolina, and pine trees in Alabama were dying as a result of beetle damage due the drought conditions, as well.

Tropical Storms

Tropical Storm Nestor became the 14th named storm of the 2019 Atlantic hurricane season, and Tropical Storm Olga became the 15th. Nestor made landfall near Apalachicola, FL on October 19th with maximum sustained winds of 60 mph. The outer bands produced several tornadoes. The strongest was rated EF-2 with winds of 120 mph, and was on the ground for 9 miles through western Polk County, FL. This tornado damaged around 50 homes and lifted a camper onto a residence. On October 25th Tropical Storm Olga was named, however six hours later, it merged with a cold front and became post-tropical. The remnants of Olga produced many weak tornadoes and heavy precipitation across Alabama. As a result, Tuscaloosa, AL observed a new maximum daily precipitation record for October at 6.5 inches of rain.

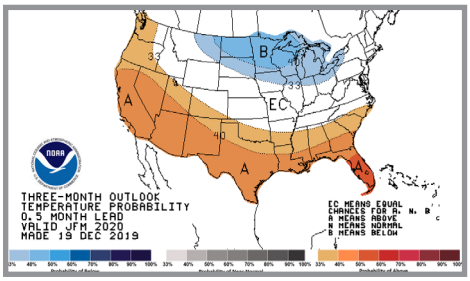
Hurricane Dorian

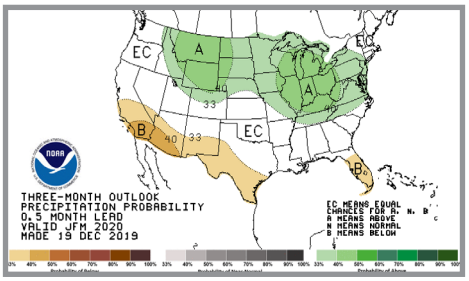
Flooding Ocracoke NC September 6

Hurricane Dorian made landfall at Cape Hatteras, NC on September 6th 2019. Several tornadoes touched down in eastern NC. As the center of Dorian moved up the coast, peak wind gusts of 110 mph were recorded at Cedar Island Ferry. Rainfall totals of 5 up to 10 inches were reported around NC and VA. The most severe storm surge flooding occurred on Ocracoke Island, where several people were trapped in their attics by the flooding from the 4 to 7 foot storm surge, requiring rescue by boats. More than 190,000 NC homes lost power during the storm.

Regional Climate Outlook for Winter 2019-2020

Temperature and Precipitation





According to the latest outlook from NOAA's Climate Prediction Center (CPC), a higher probability of warmer-than-normal winter temperatures is forecasted for the southern portion of the Southeast region, particularly in Florida. An increased chance of above-normal winter precipitation is predicted for much of North Carolina and Virginia. Below-normal winter precipitation is slightly favored across much of Florida, with equal chances for the rest of the region.

El Niño-Southern Oscillation (ENSO)

Released by the CPC on December 12th, ENSO-neutral conditions are likely (70% chance) throughout the winter in the Northern Hemisphere, and they will likely (65% chance) continue throughout the spring of 2020. Although above-average sea surface temperatures were observed in the central tropical Pacific Ocean during November, the overall oceanic and atmospheric system was consistent with ENSO-neutral, and the majority of forecast models continue to predict ENSO-neutral through the summer of 2020.

Southeast Region Partners

- National Oceanic and Atmospheric Administration
  - National Centers for Environmental Information
  - National Weather Service Eastern Region
  - National Weather Service Southern Region
  - Climate Prediction Center
  - National Hurricane Center
  - National Integrated Drought Information System
  - Carolinas Integrated Sciences and Assessments
  - National Sea Grant Office
  - Southeast and Caribbean Regional Collaboration Team
- State Climatologists
- Southeast Regional Climate Hub
- Southeast Climate Science Center
- South Atlantic Landscape Conservation Cooperative

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